USSR                                            UDC 536.45

SHPIL'RAYN, E. E., YAKIMOVICH, K. A., and TSITSARKIN, A. F.

"Investigation of Boron Oxide Density at High Temperatures by the Hydro-dynamic Weighing Method"

Moscow, Teplofizika Vysokikh Temperatur, Akademiya Nauk SSSR, Vol 9, No 1, Jan-Feb 1971, pp 67-73

Abstract:  The hydrodynamic weighing method consists of immersing a molibdenum sphere suspended by a thin wire from a balance into liquid boron oxide; the sphere moves up or down depending on the pull of the balance; the movement is slow due to the high viscosity of boron oxide.  The velocity of this motion is plotted versus the balance pull.  The equilibrium condition corresponds to zero velocity, it is used to calculate the density of the boron oxide.

The density obtained by this method in the temperature range from 850 to 2000°C is presented.  The relative error is within 0.25%.

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Acc. Nr.: AP0029501

Ref. Code: UR 0391

PROCEDURES FOR THE STUDY OF ECONOMIC EFFICIENCY ENSUING FROM
IMPROVEMENT OF HEALTH STATUS OF INDUSTRIAL WORKERS

V. F. Shplman

Summary

The author underlines that for estimating economic efficiency ensuing from improved
health condition of industrial workers as base materials should serve the data characte-
rizing social-hygienic investigations of the workers' health. The procedure encompasses
methods of estimating additional number of manpower required in branches of manufactu-
ring industries creating supplementary products and the magnitude of their cost, these
products being manufactured through using funds saved by reducing morbidity with
temporary disability, occupational sickness rate, invalidity, mortality, prolongation of
active gainful employment time, downgrading hospitalized disease cases and effective
introduction into the practice of Soviet public health of results derived from research
work. The article lists data pointing to the impossibility of taking account of all expendi-
tures which would make for good health status of industrial workers and stresses the
need for further research work in this domain. The paper includes 8 formulas for economic
calculations and literature sources.

1/1

REEL/FRAME

19681102

USSR

UDC 624.131.43+539.21.084-492.3

ZAVRIYEV, K. S., SHPIRO, G. S.

"Calculating Massive Foundations for Deep Laying in a Multilayered Soil Series"

Tr. VNII transp. str-va (Works of the All-Union Scientific Research Institute of Transport Construction), 1971, vyp. 78, pp 87-93 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11V620)

Translation: In the development of a procedure for calculating massive founda-tions of bridge supports for deep laying discussed in Appendix 25 of SN 200-62 [Construction Norms 200-62], formulas are proposed which permit calculation of foundations buried in a multilayered soil series. The formulas are based on a calculation scheme in which the foundation is considered as an infinitely rigid beam, and the soil series is considered as an elastic base characterized by the bedding coefficient which varies with depth according to an arbitrary law. In contrast to the SN 200-62 procedure, the resistance of the soil base to dis-placements of the footing points of the foundation not only in the vertical but also in the horizontal directions. The formulas permit determination of the displacements of the foundation, the internal stresses in its transverse (hori-zontal) cross sections, the normal stresses arising at the contact of the soil with the lateral surface of the foundation and also the normal and tangential stresses arising at the contact of the soil base with the foundation footing.
1/1

USSR

UDC 612.014.46

SHPIRT, M. B., Kirgiz Institute of Epidemiology, Microbiology, and Hygiene

"Effect of Poisons on Human and Warm-Blooded Animal Cells"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1972, pp 33-36

Abstract:  The toxic effect of DDT, lindane, sevin, and other pesticides on human embryonal fibroblasts in Hanks solution was twice as great as on the same cells cultured in a nutrient medium.  For example, after 24 hours' exposure to 100 mg/kg of TMTD, the index of cell degeneration (difference between the number of degenerated cells in the experiment and in the control as a percentage for each exposure) in Hanks solution was 82.1% compared to 40.7% in the nutrient medium.  The response of rabbit embryonal fibroblasts to the same poisons was not significantly different from that of the human cells.  The experimental results tend to confirm the author's assumption that individual human and warm-blooded animal cells are twice as sensitive to toxic agents as the integral organism.

1/1

- 55 -

USSR

UDC 615.285.7.099

SHPIRT, M. B., Kirgiz Institute of Epidemiology, Microbiology, and Hygiene, Frunze

"Toxicological Evaluation of the Effects of DDT, Hexachlorocyclohexane, Tetramethylthiuram Disulfide, Sevin, and Zineb on Human Cell Cultures"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1973, pp 32-35

Abstract:  DDT, HCCH, TMTD, sevin, and zineb applied to cultures of human embryonal fibroblasts, transplantable amnion cells, and Detroit cell strains had dose-dependent antimitotic action, injury occurring in the interphase or preprophase and telophase.  The cytotoxic effect of the pesticides was particularly pronounced after 48 to 96 hours and it gradually increased toward the end of the experiment.  The carbamates (TMTD, sevin, zineb) had a stronger cytotoxic and cytostatic effect than the organochlorine pesticides (DDT, HCCH). The cytotoxic effect was achieved with doses one-half to one-fourth the permissible residual amounts (per kg of human weight).  A cell culture as a test object for toxic agents is more sensitive than the integral organism because of the latter's antitoxic barriers and mechanisms of detoxification.

1/1

USSR

UDC 615.28:632.95].099.015.44

PERELYGIN, V. M., SHPIRT, M. B., and GENIS, V. I., Kirgiz Institute of Epidemiology, Microbiology, and Hygiene, Frunze

"Cytotoxicity of Combination of Pesticides"

Abstract:  The organochlorine pesticides most widely used in Kirghizia -- metaphos, methylmercaptophos, chlorophos, phosphamide, sevin, DDT, and lindane -- were isolated from food products of animal and plant origin, tobacco, water, air, mother's milk, and fatty tissue at or below the maximum permissible levels.  In experiments with human embryonal fibroblasts in vitro the addition of the individual chemical agents to the cultures in amounts actually present in people in Kirghizia had little cytotoxic effect (judged by the number of degenerated cells) compared to the control.  However, the effect was pronounced when a mixture of all the pesticides was added.  The authors caution that the results of in vitro experiments cannot be compared to the effects in vivo because of the antitoxic barriers and mechanisms of detoxification that function in the intact organism.

1/1

USSR

UDC 612.017.1.014.46:615.28

PERELYGIN, V. M., Professor, SHPIRT, M. B., ARIPOV, O. A., and YERSHOVA, V. I., Kirgiz Institute of Epidemiology, Microbiology and Hygiene, Frunze

"The Effect of Some Pesticides on Immunological Reactivity"

Abstract:  Various immunological indexes (agglutinin titers, phagocytosis, peripheral blood, cholinesterase activity, skin test with morphine, protein spectrum, changes in weight, and so forth) were studied dynamically in rabbits and mice poisoned with DDT, TMTD (tetrathion), sevin, or zineb daily for 6 months.  Three doses were used:  (i) permissible residual amount or dose insufficient to elicit changes, (ii) dose sufficient to detect physiological and biochemical changes, and (iii) toxic dose.  Immunobiological reactivity proved to be a fairly sensitive indicator of the effect of pesticides. Changes occurred even after permissible residual amounts, although they were not persistent.  After a brief and slight decrease or increase in reactivity, there was a tendency toward normalization.  Doses sufficient to cause initial toxic symptoms resulted in decreased phagocytosis of leukocytes and sharp reduction in antibody titers and immunogenic properties of blood serum.  Large (toxic) doses usually caused early decompensation and

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USSR

PERELYGIN, V. M., et al., Gigiyena i Sanitariya, No 12, 1971, pp 29-33

immunological reactivity diminished steadily.  These changes preceded the
appearance of symptoms of specific pathology.  The agglutinin titer, pro-
tective serum antibodies, leukocytic phagocytosis, and skin test with
morphine are the most sensitive indexes of immunological reactivity.

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USSR

SHPIRT, M. B., Kirgiz Institute of Epidemiology, Microbiology, and Hygiene

UDC 612.014.46

"Antimitotic Action of Toxic Chemicals on Human Cells in Tissue Culture"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1970, pp 43-45

Abstract: The effect of various doses of DDT, hexachlorocyclohexane, TMTD, sevin, and zineb on mitosis were studied in cultures of human embryo fibroblasts, human amnionic cells, and strains of Detroit cells (obtained from malignant bone marrow cells). All the compounds blocked mitosis in interphase and telophase. The carbamates (especially sevin and zineb) were twice as potent as the organochlorine pesticides. The antimitotic effect of a chemical was directly related to the concentration used. There were no significant differences among the various tissue cultures in their response to the chemicals.

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UNCLASSIFIED
TITLE--BEHAVIOR OF MICROCOMPONENTS OF THE MINERAL PART OF COALS DURING
COMBUSTION -U-

PROCESSING DATE--11SEP70

AUTHOR--GREKHOV, I.T., SHPIRT, M.YA., VOLODARSKIY, I.KH.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TVERD. TOPL. 1970, (1), 157-9

DATE PUBLISHED-------70

SUBJECT AREAS--PROPULSION AND FUELS

TOPIC TAGS--COAL, COMBUSTION R AND D, COMBUSTION PRODUCT, CHEMICAL
COMPOSITION, SILICON OXIDE, SODIUM CARBONATE, CALCIUM OXIDE, GERMANIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/2032

STEP NO--UR/0467/70/000/001/0157/0159

CIRC ACCESSION NO--AP0109964
ZZZZZZZZZZZZZ
UNCLASSIFIED

CIRC ACCESSION NO--AP0109964    UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STATISTICAL ANAL. OF EXPTL. DATA DISCLOSED THAT THE ASH CONTENT A IN BROWN COALS IN THE RANGE 8.2-28.6PERCENT HAD NO EFFECT ON THE DISTRIBUTION OF GE BETWEEN THE SLAG AND THE VOLATILE ASH OR ON THE RATIO K OF THE GE CONCN. IN THE SLAG TO THE CONCN. IN THE INITIAL ASH, WHEN COAL WAS BURNED IN OVENS FOR THE POWDER LIKE FUEL. IN THE STATIONARY BED FLAME OVENS K WAS INDEPENDENT OF A FOR A LESS THAN 32PERCENT; WITH A GREATER THAN 32PERCENT, K INCREASED. A PILOT FLAME OVEN FOR THE EXPTS. IN THE STATIONARY FUEL BED WAS USED. THE SCHEME AND THE OVEN ARE DESCRIBED. WITH INCREASING CONTENTS OF CAO AND SIO IN THE INITIAL ASH AS WELL AS WITH ADDNS. OF NACL, NA SUB2 CO SUB3, AND MGCO SUB3 K INCREASED.

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UNCLASSIFIED

USSR

ALADINSKIY, V.K., MIKHAYLOV, L.N., SHPIRT, V.A.

UDC 537.311.33.001.2

"Generation Of Microwave Oscillations In Silicon Epitaxial P-N Junctions"

Elektron. tekhnika. Nauch.-tekhn.sb. Poluprovodn. pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 7(64), pp 21-23 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B108)

Translation: The paper reports on the generation of microwave oscillations in p-n junctions in which the base and rectifying layers are obtained by epitaxy. The breakdown voltages of the semiconductor diode are found in the 60---80 v interval. The capacitance with zero bias is $\leqslant 1$ pf. The wavelength of the oscillations which are generated is 5.4---5.8 cm.

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"Semiconductor Diodes For Control Of Microwave Power"

Abstract:  The paper discusses the thermal and electrical effects in switching and limiter diodes at high and low levels of microwave power, the system of parameters of the diodes, and the methods for their measurement. The principal statements of the theory of devices for control of microwave power are discussed. Planning of one- and multichannel regulator units based on switching and limiter. devices is described. It is concluded that use of switching and limiter diodes in microwave technology makes it possible to reduce the dimensions and weight of apparatus, to increase its speed of response, to reduce the power with respect to control goals, and to increase the reliability. 15 fig. 22 ref. Received 3 Jan 1972.

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USSR

UDC 621.382.2

SHPIRT, V.A.

"Microwave Band Limiter Diodes"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov.radio," 1970, pp 64-81 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B150)

Translation: A new semiconductor devices is described--a microwave band semiconductor limiter diode, which is essentially an analog of a microwave discharger. The semiconductor diode is characterized by the following parameters: at a low power level, the capacitance amounts to 0.7--3.4 pf (3 groups), the resistance 5--15 ohm; at a high power level the resistance is $<$0.5 ohm; the limiting threshold is on the order of a milliwatt, thermal resistance is $<$100 deg/watt, recovery time is $<$200 nunosec, transient time is $<$1 nanosec. During operation in the decimeter band with 1 kwt power the limiting device assures blocking losses on the order of 30 db and with power $<$1 milliwatt, the gating losses amount to approximately 0.5 db. It is possible to develop a microwave power regulator on the basis of the limiting semi-conductor diode. 7 ill. 20 ref.

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USSR                                                          UDC 621.382.2

SHPIRT, V.A., SHUMKOV, N.V.

"Concerning The Transient Time Of A Limiter Diode"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductors Devices And Their
Application--Collection Of Works), No 23, Moscow, "Sov.radio," 1970, pp 198-202
(from RZh--Elektronika i yeye primeneniya, No 12, December 1970, Abstract No 12B147)

Translation: An evaluation is conducted of the transient time of a limiter semi-
conductor diode. The experimental determination of this magnitude was accomplished
by measurement of the duration and amplitude of the microwave power leakage peak.
Oscillograms of the pulses of the elapsed power show that in this case a peak in
the conventional sense is absent because the beginning of the pulse is limited no
less effectively than the entire pulse. 2 ill. 3 ref. Summary.

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USSR                                                    UDC 621.382.2

SHPIRT, V.A., ULANOVSKIY, E.N.

"Investigation Of The Thermal Characteristics Of Semiconductor Limiter Microwave Diodes"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Vyp 23, Moscow, "Sov.radio," 1970, pp 227-237 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B97)

Translation:  The method of computation is discussed for the thermal processes in a semiconductor diode with a mesa structure, taking into account the heat removal from the p-n junction at both sides during continuous and pulse regimes. A method is described for measurement of the instantaneous values of the temperature of a p-n junction in the course of its heating and cooling. It is shown that the thermal resistance of a limiter semiconductor diode amounts to ~75 degree/watt, and within wide limits its pulse thermal resistance is described by the formula

$$R_t i = 3.10^3 \sqrt{t_i}$$

where $t_i$ is the pulse duration of microwave power in seconds (for a semiconductor diode with a 100 micrometer diameter of the mesa structure). The experimentally determined dependence of the p-n junction temperature of a limiter microwave diode on the pulse duration agrees satisfactorily with the computations. 5 ill. 1 tab. 6 ref. Summary.

USSR

SHPIRT, V.A. VERVEL'SKIY, A.A.

UDC 621.382.2.029.64

"Recovery Time Of A Limiting Diode And The Method Of Its Determination"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov. radio," 1970, pp 192-197 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B94)

Translation: A calculation is conducted of the recovery time of a limiting semi-conductor diode, on the basis of an analysis of the change of the stored charge. The measurements, done by two methods (directly at microwave frequency and by determination of the recovery time through the stored charge), show that the theoretical value of the recovery time ( $\approx 10^{-7}$ sec) is close to the experimental. Conclusions are drawn concerning the advisibality of measuring the stored charge instead of directly determining the recovery time. 3 ill. 1 tab. 2 ref. Summary.

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Heat Treatment

USSR                                                    UDC: 669.293

YELISEYEV, S. A., SHPITSBERG, A. L., RYABYSHEVA, N. D., KALACHEV,
I. B., and SAVINOV, A. T.

"Alloys With A Niobium Base for Elastic Sensing Elements"

Moscow, Tsvetnyye Metally, No 7, Jul 70, pp 61-62

Abstract: The purpose of the experiments described by this article
was to develop alloys which can   be   used   as   elastic sensing
 elements     at temperatures above 500-550°, the present-day
limit.  Taking up where an earlier article left off (Yeliseyev,
S. A., et al, Tsvetnyye metally, No. 12, 1968) the authors pro-
cessed two alloys consisting of various proportions of refractory
elements Mo, Zr, Tl, Cr, C, Nb, and N+O.  The proportions of the
last two were the same in both cases, the proportion of Nb being
standard.  The alloys were given two smeltings in a vacuum elec-
tric-arc furnace with soluble electrodes, and the ingots were
given hot and cold deformations for conversion into sheets 0.3 mm
thick.  Investigating the effect of thermal processing on these
sheets, the authors found that they could get effective hardening
by a vacuum procedure consisting of tempering in oil and subse-

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USSR

YELISEYEV, S. A., et al., Tsvetnyye Metally, No 7, Jul 70, pp
61-62

quent aging.  From their experiments, the authors concluded that
the alloys can be toughened, with niobium as the basis, through
vacuum processing with tempering in the 1400-1800° C range, and
aging at 950-1050° C.  Theyfound also that they can develop alloys
that can work as elastic sensing elements at temperatures of 800°.

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USSR

UDC 669.293.5.018.27:669.018.2(088.8)

YELISEYEV, S. A., SHPITSBERG, A. L., and RYABYLHEVA, N. D.

"Niobium-Base Alloy"

USSR Authors' Certificate No 263160, Cl. 40 b, 27/00, (C22c), filed 16 Jan 69, published 29 May 70 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 I867 by V. KISHENEVSKIY)

Translation:  The Nb-base alloy with elevated resistance to relaxation up to 700° is intended to function as the elastic sensing element of instruments. The alloy contains the following (in %):  Mo 2.5-10, Ti 1-4, Zr 1-4, C 0.02-0.4, Cr 0.1-5, and Y 0.01-0.1.  In the hardened state (vacuum-hardening from 1500-1700° and aging at 900-1000°) the relaxation of stress on an 0.3-mm strip at 700° in 200 hours, given an initial stress of 44 kg/mm$^2$, is 6-7%. Mechanical properties in the hardened and soft state are given.

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USSR

SHPIZ, B. G.

UDC 681.325.65:525

"Electropneumatic Trigger with Two Inputs"

USSR Author's Certificate No 288408, Filed 19/05/69, Published 28/01/71,
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychis-
litel'naya Tekhnika, No 11, 1971, Abstract No 11 A79 P).

Translation: An electropneumatic trigger with two inputs is suggested,
containing a pneumatic trigger with two inputs and two input electropneuma-
tic convertors. In order to decrease the electric power consumption, the
common drive of the supply circuit of the input convertors is connected in
series with the power terminal through blocking electropneumatic convertors,
the pneumatic input of the first of which is connected to the supply chan-
nel, while that of the second is connected through a choke to the output of
the pneumatic trigger. 1 Figure.

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USSR

CHUDINOV, I. L., SHPOTIN, V. Ye.

UDC: 8.74

"Programs for Solution of the Problem of Optimum Distribution of Data Blocks on Magnetic Tape"

Tomsk, Kibernetika i vuz--sbornik (Cybernetics and Higher Education--collection of works), vyp. 5, 1972, pp 122-124 (from RZh-Kibernetika, No 5, May 73, abstract No 5V769 by the authors)

Translation:  The paper describes a program for realizing an algorithm of optimum arrangement of data blocks on magnetic tape on the "MIR-1" digital computer.

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U13

TITLE--PREPARATION OF SHELL MOLDS BY USING ETHYL SILICATE 40 FOR INVESTMENT CASTING -U-

UNCLASSIFIED

PROCESSING DATE--23OCT70

AUTHOR-(05)-OZEROV, V.A., SAKODYNSKIY, K.I., SHPRITS, B.B., MOSEVA, L.I., BERKOVSKIY, V.M.

COUNTRY OF INFO--USSR

SOURCE--LITEINGE PROIZOD. 1970, 2, 14-15

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHELL MOLD, INVESTMENT CASTING, ORGANIC SILICATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1735

CIRC ACCESSION NO--AP0118713

STEP NO--UR/0128/70/002/000/0014/0015

UNCLASSIFIED

CIRC ACCESSION NO--AP0118713
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  THE APPLICATION OF ET SILICATE-40
  TO SHELL MOLDS MADE IT NECESSARY TO FOLLOW THE PROCESSES OCCURRING
  DURING THE PREPN. OF THE BONDING SOLN.  PROPERTIES OF THE SOLN. ARE
  DEPENDENT ON THE CONTENT OF FREE H SUB2 O.  CHROMOATOG. OF HYDROLYZED ET
  SILICATE SOLN. IS USED TO DET. THE PROCESSES OCCURRING DURING
  HYDROLYSIS.  ON THIS BASIS, IT IS POSSIBLE TO CHOOSE:   AN OPTIMUM
  RECIPE, A MANNER OF HYDROLYSIS, A MEANS OF PREPN. OF SHELL MOLDS FOR
  EACH PROCESS VARIANT, AND A MEANS OF CONTROLLING THE COMPN. OF
  HYDROLYZED SOLNS.  THE ADDN. OF ET SILICATE-40 DECREASED THE COST OF THE
  BONDING AGENT AND INCREASED THE PRODUCTIVITY OF SHELL MOLD PREPN.

UNCLASSIFIED

Acc. Nr: *AP0044685*

# PHLEBOGRAPHY IN DISEASES OF THE VENOUS SYSTEM OF THE LOWER EXTREMITIES

## Ya. I. Shpungin

Transcalcaneal phlebography was performed in 54 patients with different diseases of the venous system of the lower extremities. Phlebography, carried out with a 50 per cent diodon in inclined position of the patient, enabled to obtain complete contrast filling of the entire venous system of the lower extremities. Phlebography of deep veins in postphlebitic syndrome is characterized by destructive changes of veins and valves as the result of sustained thrombosis and helps to elucidate the degree of recanalization. In varicose ulcers of the shin phlebography defines the localization of dilated communicating veins, this creating conditions for their ligation during the operation.

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REEL/FRAME

19771416

USSR

SHPUNT, I. Z.

UDC: 51

"Algorithm and Program of Calculations for a Single-Product Model of the United States Economy"

V sb. Probl. postroyeniya i ispol'z. narodnokhoz. modeley (Problems of Constructing and Utilizing National Economic Models—collection of works), Novosibirsk, 1971, pp 313-330 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V432)

[No abstract]

1/1

USSR

SHPUNT, L. B., and KOMAROV, YE. V.

UDC 541/13

"Thermodynamic Equilibrium Constants and Heat Effects of the Extractions of Uranyl Nitrate With Trialkylphosphates in Inert Solvents. VI. Tri-n-Heptylphosphate (THpP)"

Abstract: The structure of the extracted complex of tri-n-heptylphosphate (THpP) with uranyl nitrate was determined; it is the same for $UO_2(NO_3)_2 \cdot 2THpP$ as it is for $UO_2(NO_3)_2 \cdot 2TEP$; the $NO_3$ groups are in trans-postion with coordination capacity of 2. Thermodynamic equilibrium constants for the extraction of uranyl nitrate with THpP solutions in carbon tetrachloride and n-decane were determined for the temperature range 10-50°C, as well as other thermodynamic functions: $\Delta H$, $\Delta G$, and $\Delta S$ for t = 25°C.

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USSR

SHPUNT, L. B., KOMAROV, YE. V., and PUSHLENKOV, M. P.

UDC 541.13

"Thermodynamic Equilibrium Constants and Heat Effects of the Extractions of Uranyl Nitrate with Trialkylphosphates in Inert Solvents. VII. Tri-n-Octylphosphate (TOP)"

Abstract: The structure of the extracted complex of tri-n-octylphosphate (TOP) with uranyl nitrate was determined: it is the same for $UO_2(NO_3)_2 \cdot 2TOP$ as it is for $UO_2(NO_3)_2 \cdot 2TEP$; the $NO_3$ groups are in trans-position with coordination capacity of 2. Thermodynamic equilibrium constants for the extraction of uranyl nitrate with TOP solutions in carbon tetrachloride and in n-decane were determined for the temperature range 10-50°C, as well as other thermodynamic functions: $\Delta H$, $\Delta G$, and $\Delta S$ for $t = 25$°C.

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USSR

SHPUNT, L. B., KOMAROV, YE. V., and PUSHLENKOV, M. F.

UDC 541.13

"Thermodynamic Equilibrium Constants and Reaction Heat Effects of the Extraction of Uranyl Nitrate with Trialkylphosphates in Inert Solvents. IX. Tri-n-Decylphosphate (TDP)"

Abstract: The structure of $UO_2(NO_3)_2 \cdot 2TDP$ has been established from infrared spectroscopical data, and found to be identical with the triethylphosphate complex: the molecules of TDP are in trans-position coordination capacity of $NO_3^-$ groups being 2. Thermodynamic equilibrium constants of the extraction of uranyl nitrate with TDP in $CCl_4$ and n-decane were determined from the temperature range of 10-50°C. The values of $\Delta H$, $\Delta G$, and $\Delta S$ were obtained from equilibrium constant of the extraction expressed as a function of temperature.

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USSR

KOMAROV, YE. V., and SHPUNT, L. B.

UDC 541.13

"Thermodynamic Equilibrium Constants and Reaction Heat Effects of the Extraction of Uranyl Nitrate with Trialkyl Phosphates in Inert Solvents. VII. Tri-n-Nonylphosphate (TNP)"

Leningrad, Radiokhimiya, Vol 13, No 6, 1971, pp 893-895

Abstract: The structure of $UO_2(NO_3)_2 \cdot 2TNP$ has been established from infrared spectroscopical data, and found to be identical with the structure of triethyl-phosphate complex: the molecules of TNP are in trans-position, coordination capacity of $NO_3^-$ groups being 2. Thermodynamic equilibrium constants of the extraction of uranyl nitrate with TNP in $CCl_4$ and n-decane were determined from the temperature range of 10-50°C. The values of $\triangle H$, $\triangle G$, and $\triangle S$ were obtained from the equilibrium constant of the extraction expressed as a function of temperature.

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USSR

SHPUNT, L. B., and KOMAROV, Ye. V.

UDC 541.13

"Thermodynamic Equilibrium Constants and Thermal Effects of the Extraction Reactions of Uranyl Nitrate, With Use of Trialkylphosphates in Inert Solvents:  III. Tri-N-Propylphosphate (TPPh)"

Abstract:  Synthesized tripropylphosphate (TPPh) in the forms $UO_2(NO_3)_4 \cdot 2TPPh$ and $UO_2(NO_3)_2 \cdot 2TPPh$ was studied spectrometrically.  The structure of the two solvates was found to be identical.  X-ray analysis showed that for the compound $UO_2(NO_3)_2 \cdot 2TPPh$, the phosphate molecules are in the trans-position, while the $NO_3^-$ group has a coordination capacity of 2.  Also determined were the distributions of TPPh between aqueous solutions and carbon tetrachloride and n-dekane at 10-50°C, and the concentrations of TPPh in a 0.08-0.15 M organic phase.  Thermodynamic equilibrium constants for the same solution and temperatures were determined.  On the basis of the relationship of the constant with temperature, the functions of the extraction reaction $\Delta H$ (cal/mole), $\Delta S$ (cal/deg·mole) and $\Delta G$ (cal/mole), were determined for t = 25°C.

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USSR

KOMAROV, Ye. V., SHPUNT, L. B., and PUSHLENKOV, M. F.

"Thermodynamic Equilibrium Constants and Thermal Effects of the Extraction Reactions of Uranyl Nitrite with Use of Trialkylphosphates in Inert Solutions:  I. Tri-N-Butylphosphate (TBPh)"

Abstract:  Various parameters in addition to bond energy exert a substantial effect on the equilibrium of chemical reactions; these include mass, size, symmetry, and others.  Owing to the complexity of this problem, a simplified approach was applied here in the study of such parameters.  The structure of the solvate $UO_2(NO_3)_2 \cdot 2TBPh$ was determined, along with the thermodynamic equilibrium constants of the extraction reactions for tri-n-butylphosphate in carbon tetrachloride and in n-dekane, at temperatures of 10-15°C.  The thermodynamic extraction functions $\Delta H$, $\Delta G$ and $\Delta S$, at $t = 25°C$ were also determined.

1/1

USSR

RAYBMAN, N. S., SHPUNT, M. I., OVSEPYAN, F. A., DURGARYAN, I. S.

UDC 519.281

"Information Measure of Determinacy and Its Use in Identification of Objects of Control"

Tr. 1 Vses. simpoziuma po statist. probl. v tekhn. kibernet. Identifik i apparatura dlya statist. issled. (Works of the First All-Union Symposium on Statistical Problems in Technical Cybernetics. Identification and Equipment for Statistical Investigation), Moscow, "Nauka", 1970, pp 126-136 (from RZh-Matematika, No 10, Oct 70, Abstract No 10V109)

Translation: The problem of quantitatively evaluating the degree of isomorphism of the mathematical model of an object-original is discussed. The quantitative estimate of the degree of isomorphism proposed, the information measure of determinacy, is based on the fundamental notions of information theory. Let a random quantity $X$ "act" on the input of a one-dimensional inertialess object and the random quantity $Y$ "act" on the output. A certain distribution of the values of $Y$ corresponds to each fixed $X$. In this case it is proposed that the following quantity be used as a relative informa-tion measure of determinacy:

1/2

USSR

RAYBMAN, N. S., et al, Tr. 1 Vses. simpoziuma po statist. probl. v tekhn. kiber-net. Identifik i apparatura dlya statist. issled., Moscow, "Nauka", 1970, pp 126-136

$$q_\chi\{Y\} = I_\chi\{Y\}/H\{Y\}, \qquad (1)$$

where $I_\chi\{Y\}$ is the quantity of information on $Y$ contained in the input quantity $X$ and $H\{Y\}$ is the unconditional entropy of the quantity $Y$. Calculation of the information measure of determinacy by formula (1) involves a large number of calculations in practice. It is shown in the work that under certain constraints on the unconditional and conditional probability density of the quantity $Y$ it is possible to express the information measure of determinacy in terms of more simple characteristics of the object; in particular, in terms of the measure of determinacy based on dispersion methods for random quantities. Such a measure of determinacy was introduced by N. S. Raybman (Avtomatika i Telemekhanika, 1963, 24, No 9). One can similarly introduce an information measure of determinacy for static multidimensional and dynamic objects. Examples of calculating the measure are given. Yu. Shinakov.

1/2    007
TITLE--CONTINUOUS METHODS FOR PREPARING CONCENTRATED PHOSPHORIC ACID AND
    FERTILIZERS BASED ON THE DECOMPOSITION OF PHOSPHATES BY FLUOROSILICIC
AUTHOR--SHPUNT, S.YA.

UNCLASSIFIED          PROCESSING DATE--13NOV70

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 28-33

DATE PUBLISHED------70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--PHOSPHORUS FERTILIZER, PHOSPHORIC ACID, CHEMICAL
    DECOMPOSITION, FERTILIZER PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0994

STEP NO--UR/0064/70/046/001/0028/0033

CIRC ACCESSION NO--AP0109151
                    UNCLASSIFIED

UNCLASSIFIED          PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109151
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METHODS DEVELOPED IN THE USSR ARE
REVIEWED FOR THE SO CALLED CYCLIC DECOMPN. OF PHOSPHATE ROCKS BY HF AND
H SUB2 SIF SUB6 IN WHICH THE ACIDS ARE RECOVERED AND RETURNED TO THE
PROCESS WHILE THE CAF SUB2 PPT., WHICH IS A BY PRODUCT OF THE PROCESS
(IN ADDN. TO THE MAIN PRODUCT, MONOCALCIUMPHOSPHATE), IS USED IN CEMENT
MANUFG., SO THAT THERE ARE NO WASTE PRODUCTS. THE MAIN ADVANTAGE OF
SUCH PROCESSES IS THE HIGH DEGREE OF DECOMPN. OF THE ROCKS (NEARLY
100PERCENT) AND THE RECOVERY OF THE ACIDS; THE MAIN DISADVANTAGES ARE
ASSOCD. WITH THE HIGH CORROSIVENESS OF THE PROCESS SOLNS. AND WITH THE
NEED FOR HIGH TEMPS. (UP TO 1500DEGREES) FOR THE DECOMPN. OF THE CASIF
SUB6 2H SUB2 O.

UNCLASSIFIED

TITLE--SULFUR DIOXIDE BY COMBUSTION OF SULFUR CONTAINING SUBSTANCES IN
   FLUIDIZED BEDS -U-

AUTHOR--TERNOVSKAYA, A.N., SHPUNT, S.YA., SHVARTSSHTEIN, YA.V., MALETS,
   A.M., KORENBERG, YA.G.

COUNTRY OF INFO--USSR

SOURCE--GER. 1,467,096

DATE PUBLISHED--26MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SULFUR OXIDE, FLUIDIZED BED, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1863        STEP NO--GY/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0108197
ZZZZZZZZZZZZZ                 UNCLASSIFIED

CIRC ACCESSION NO--AA0108197
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  A PROCESS IS DESCRIBED FOR
PRODUCING SO SUB2 FROM ELEMENTAL S OR S,CONTG. MATERIALS UTILIZING A
DOUBLE FLUIDIZED BED ARRANGEMENT WHEREBY BURNING TAKES PLACE IN THE
LOWER BED WITH THE TEMP. REACHING 700-1000DEGREES FOLLOWED BY COOLING OF
THE GASES IN THE UPPER BED TO 350-450DEGREES.  WHEN S IS USED, THE LOWER
BED CONSISTS OF AIR FLUIDIZED INERT MATERIAL (E.G., QUARTZ SAND,
CHAMOTTE); WHEN S,CONTG. MATERIAL (E.G., PYRITES) IS USED, THE MATERIAL
ITSELF CONSTITUTES THE FLUIDIZED MEDIUM.   THE UPPER BED CONSISTS OF
HEAT ABSORBING MATERIALS.

USSR

UDC: 771.351.3

VOLOSOV, D. S., SHPYAKIN, M. G., TARABUKIN, V. V., GRIGOR'YEVA, N. M.

"A Fast Photo Lens"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328408, Division G, filed 4 May 70, published 2 Feb 72, p 142

Translation: This Author's Certificate introduces: 1. A fast photo lens which contains four components, the first made up of two separate negative menisci with concavity facing the diaphragm, and the second made up of a double-cemented element and a separate element. As a distinguishing feature of the patent, correction of aberrations is improved with simultaneous reduction of the overall longitudinal size by equipping the first component with an additional negative meniscus with concavity facing the diaphragm, and by making the separate element of the second component in the form of a negative meniscus with concavity turned toward the diaphragm, and making the third component from cemented positive and negative menisci and a biconvex lens with a power that is 15 and 1.6 times that of the positive and negative meniscus respectively. The fourth component is cemented up from a positive and a negative meniscus with powers of the same order and a difference in the coefficients of refraction of at least 0.19 and

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USSR

VOLOSOV, D. S. et al., USSR Author's Certificate No 328408

a dispersion coefficient ratio of at least 2.2. 2. A modification of this lens distinguished by the fact that a field of view of at least 90° is achieved in a liquid by making the separate and double-cemented elements of the second component as a single unit.



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- 138 -
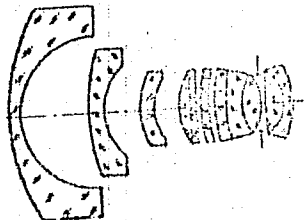
UNCLASSIFIED        PROCESSING DATE--04DEC70

TITLE--DESIGN OF A PANCRATIC OBJECTIVE ANASTIGMAT OF PARTICULARLY GREAT
 MULTIPLICITY -U-

AUTHOR--SHPYAKIN, M.G.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP
 25-28

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAUSSIAN DISTRIBUTION, MATHEMATIC METHOD, OPTIC SYSTEM, OPTIC
 PROPERTY, CHROMATIC ABERRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1345        STEP NO--UR/0237/70/000/001/0025/0028

CIRC ACCESSION NO--AP0123303
                    UNCLASSIFIED

2/2    020
CIRC ACCESSION NO--AP0123303
ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. A METHOD AND CALCULATION PROCEDURE
ARE DESCRIBED BASED ON THE EXAMPLE OF AN OBJECTIVE WITH VARYING FOCUSING
DISTANCE FROM 12 TO 240 MM WHICH MAKE IT POSSIBLE TO FIND OPTIMAL
SOLUTIONS QUICKLY IN THE GAUSSINA ZONE AND THIRD ORDER ABERRATIONS FOR A
SYSTEM WITH NONLINEARLY SHIFTING COMPONENTS.

UNCLASSIFIED

USSR

STRELCHUK, N. A., KHESIN, G. L., KOSTIN, I. KH., SHEVYAKIN, V. N.,
MARSHAK, YU. I.

"Studies of Stresses in Tunnels by the Polarization Optical
Method and Under Natural Conditions Under the Effect of an
Explosive Load"

Sb. tr. Mosk. inzh. stroit. in-t (Collected Works of the Moscow
Construction Engineering Institute), 1970, No 73, pp 53-63 (from
RZh-Mekhanika, No 11, Nov 70, Abstract No 11V814)

Translation: The stressed state of the hydrotechnical tunnels
of the Toktogul GES /Hydroelectric Power Plant_7 and the Alma-
Ata siltproof dam occurring when exploding charges during their
construction was investigated in two-dimensional models. The
scales of geometric similarity were (2.5-6)·10³. The complex
shape of the day surface led to multiple application of the inci-
dent and reflected waves. The stresses in the outline of the
tunnels were determined by pictures of the interference bands
from the condition of similarity of the wave field in nature and
in the model using known theoretical and empirical relations.

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USSR

STRELCHUK, N. A., et al, Sb. tr. Mosk. inzh. stroit. in-t, 1970,
No 73, pp 53-63

The problem was solved under the assumption of elasticity aniso-
tropy of the material in nature (limestone) and the model (ED5-
MTGFA). For the characteristic times corresponding to the effect
of different waves in the tunnel, stress-strain diagrams of the
expected maximum outline stresses are presented. A comparison
of the results obtained using the model and natural measurements
is presented for the Alma-Ata Dam. The bibliography has 9 entries.

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USSR

UDC:536.468

VILYUNOV, V. N., USHKOV, V. M., SHRAGER, E. R., Tomsk

"Ignition of a Cylindrical Channel of Condensed Material in a Semiclosed Volume"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 311-317

Abstract:  A simple statement of the problem of the variation of pressure in a channel of condensed medium burning stably in a semiclosed volume is studied.  It is assumed that only a comparatively small portion of the condensed material is ignited.  The subsequent combustion process is limited primarily by propagation of the flame along the material.  Graphs are presented showing the change in pressure, local speed of sound and local flow rate.

1/1

AAO044772

UR 0482

Soviet Inventions Illustrated, Section II—Electrical, Derwent,

I 241915 DIGITAL READOUT FOR VISUAL CONTROL OF MOVEMENT comprises a multi-division optical pickup, each division comprising a body (1) with ten equally spaced holes, a mask with a single hole (2) and an illuminator (3). The ten fibre optics (4) have their ends arranged to correspond to the appropriate figure on a mosaic panel (5), or illuminate one of ten discs on which the figure is engraved. The transmission drive (6) for the masks has a ratio of 1:10. Movement of input shaft (7), connected to the drive screw, or rack, will operate the masks and illuminator (3) will light the appropriate number in each decimal division 22.2.68 as 1220391/25-8 I. K. SHRAGO. UKRAINIAN MACHINES & TOOLS RES.INST. (28.8.69) Bul 14/18.4.69. Class 49a. Int.Cl.B 23b.

19771566

AA0044772

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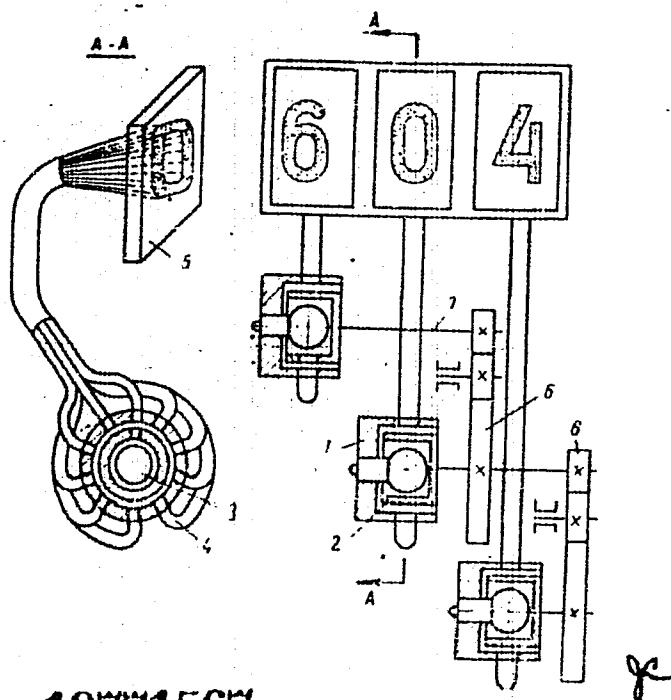


19771567

AA0044772
AUTHORS:   Shrago, L. K.; Sribner, L. A.; Peschanskiy, B. I.; Vorozhbiyev, A. A.

Ukrainskiy Nauchno - Issledovatel'skiy Institut Stankov i Instrumentov

19771568

Surgery

SHRAGO, M. I., SHINKARENKO, A. A., GONCHAROVA, L. S., RYBUS, M. YA., and
POLUPAN, V. N., Khar'kov Scientific Research Institute of General and Emergency
Surgery, Khar'kov

"Local Hemostatics Based on Oxidized Cellulose"

Abstract: Hemostatics prepared on the basis of oxidized cellulose by methods
developed by workers at the Khar'kov Chemico pharmaceutical Institute (B. G.
Yasnitskiy, Ye. B. Dol'berg, V. A. Gridoroga, A. A. Shalimov, V. N. Polupan,
A. A. Shinkarenko, and M. I. Shrago) were subjected since 1965 to experimental
and clinical tests at the Khar'kov Scientific Research Institute of General and
Emergency Surgery. After experimental tests on animals, the hemostatics were
applied clinically at the Institute of General and Emergency Surgery under the
direction of Prof. A. A. Shalimov, Corresponding Member of the Academy of
Sciences Ukrainian SSR, Director of the Institute. Hemostatic gauze,
hemostatic viscose fabric, and the hemostatic composition Oxycellodex
(hemostatic gauze powder + 20% of a dextran solution with a mol. wt. of
45,000-70,,,) were applied successfully on patients. The guaze and viscose
fabric were used to stop the blood flow from small blood vessesl after major

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USSR

SHRAGO, M. I., et al., Vestnik Khirurgii imeni I. I. Grekova, Vol 106, No 5,
May 71, pp 61-64

operations. An advantage of these hemostatics was that they did not have to
be removed from the wound, because they were resorbed. Oxycellcdex was
injected with a syringe to fill the channels left after transcutaneous punc-
ture   biopsy of the liver of splenic portography. The hemostatic gauze is
being produced at the experimental plant of the Khar'kov Chemico pharmaceutical
Institute. Preparations for the production of the hemostatic viscose fabric
at this plant have been made.

2/2

1/2     012                    UNCLASSIFIED           PROCESSING DATE--16OCT70
TITLE--SPECTROPHOTOMETRIC METHOD FOR THE DETERMINATION OF GOMPHOTIN IN
  GOMPHOCARPUS FRUTICOSUS -U-
AUTHOR-(02)-TSARENKO, N.YA., SHRAIBER, M.S.

COUNTRY OF INFO--USSR

SOURCE--FARMATISIYA (MOSCOW) 1970, 19(2), 39-41

DATE PUBLISHED-------70


SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, CHEMICAL ANALYSIS, PAPER
  CHROMATOGRAPHY, SPECTROPHOTOMETRY


CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0300          STEP NO--UR/0466/70/019/002/0039/0041

CIRC ACCESSION NO--AP0119288
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0119288
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  IN EVALUATING THIS PLANT AS A
SOURCE OF GOMPHOTIN, MICROMETHODS MUST REPLACE THE USUAL BIOL.
PROCEDURES FOR TOTAL GLYCOSIDE DETN.  THE QUANT. CALCN. INVOLVES ALC.
EXTN. OF THE RAW MATERIAL, PAPER CHROMATOG., AND SPECTROPHOTOMETRY OF
THE COMPDS. FORMED BY GOMPHOTIN PLUS SODIUM PICRATE.  EXT. THE BIOMASS
WITH 70PERCENT ETOH.  AFTE DISTG. THE ALC., TREAT RESIDUE WITH 15PERCENT
LEAD ACETATE.  POOL SUPERNATANT AND WASH SOLNS. FROM THE PPT. AND EXT.
THE GLYCOSIDES WITH ALC. CHCL SUB3 1:3.  FILTER THE ALC. CHCL SUB3 LAYER
THROUGH DRIED NA SUB2 SO SUB4, SHAKE WITH CHCL SUB3, AND FILTER.  AFTER
DISTG. THE CHCL SUB3 ADD ETOH TO THE RESIDUE CONTG. TOTAL GLYCOSIDES AND
CHROMATOGRAPH BY THE ASCENDING METHOD IN CHCL SUB3 SATD. WITH FORMAMIDE
UNTIL THE FRONT ADVANCES ABOUT 30 CM.  DRY 10 MIN AT ROOM TEMP.  CUT 2
STRIPS, DEVELOP WITH 10PERCENT M DINITROBENZENE IN BENZENE AND 10PERCENT
NACL IN MEOH, AND MARK GOMPHOTIN SPOTS WITH PENCIL.  ON THE UNDEVELOPED
STRIPS MARK AND CUT OUT PORTIONS WHOSE CENTER CORRESPONDS TO LOCATION OF
THE GOMPHOTIN SPOT; DRY AT 105DEGREES 30 MIN AND PLACE IN AN ELUTION
APP. WITH 70PERCENT ETOH 3-4 HR.  IN A 10 ML MEASURING FLASK BRING
ELUATE TO VOL. WITH 70PERCENT ETOH AND SHAKE.  FOR DETN., TO 5 ML OF
ELUATE ADD 5 ML NA PICRATE AND PLACE ON SPECTROPHOTOMETER IN 1 CM
CUVETTE LAYER.  EVALUATE OPTICAL D. AT 495 NM BY COMPARING WITH
CALIBRATION GRAPH CONSTRUCTED AS DIRECTED.  A FORMULA FOR DETG. PERCENT
CONTENT IS PRESENTED.  FIVE TEST SERIES OF THE PLANT SHOWED GOMPHOTIN IN
THE RANGE OF 0.07-0.1PERCENT.          FACILITY: KHAR'KOV. NAUCH.
ISSLED. KHIM. FAR. INST., KHARKOV, USSR.

UNCLASSIFIED

Adsorption

USSR                                              UDC 66.074.396.22

SHRAMBAN, B. I., KSENZENKO, V. I., ZAKGEYM, A. YU., Moscow Institute of Fine
Chemical Technology imeni. M. V. Lomonosov

"Sorption of Hydrogen Fluoride by AB-17 x 8 Anion-Exchange Resin from the Gas
Phase"

Abstract:  A study was made of the sorption of HF by AB-17 x 8 anion-exchange
resin from wet gases under laboratory conditions to obtain a mathematical
description of the process.  The Hartley plan with a nucleus quarter-replica
type $2^{6-2}$ was used.  The experiments were performed under dynamic conditions
with the following independent variables: $x_1$ -- $\log C_{HF}$ where $C_{HF}$ is the
initial HF concentration in the gas, mg/$\ell$ ; $x_2$ -- experimental temperature,
°C; $x_3$ -- moisture of the gas, %; $x_4$ -- gas velocity, m/sec; $x_5$ -- log d where
d is the grain diameter of the ion-exchange resin in the tested fraction,
mm; $x_6$ -- height of the ion-exchange resin layer, mm.  The coding conditions
and experimental matrix are presented in table form.  The regression coeffic-
ients were calculated on a computer and the Student criterion was used to
eliminate some of them.  The regression equation obtained agrees with the
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USSR

SHRAMBAN, B. I., et al., Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, Vol XV, No 7, 1972, pp 1112-1114

theoretical effect of the wetness of the gas and the grain size of the resin on sorption. The absorption mechanism is explained according to the following formulas:

$$HF + ROH \rightleftharpoons RF + H_2O, \quad RF + HF \rightleftharpoons RHF_2, \quad RHF_2 + nHF \rightleftharpoons RHF_2 \cdot (HF)_n.$$
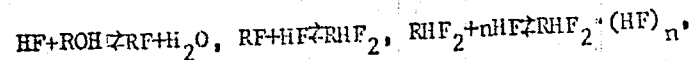
where n is the index indicating the number of moles of HF not sorbed by the ion-exchange mechanism.

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- 1 -

3

USSR                                             UDC: 539.121.75

GRISHAYEV, I. A., YEFIMOV, V. P., KASILOV V. I., KOVALENKO, G. D., MORO-
KHOVSKIY, V. L., FISUN, A. N., SHRAMENKO, B. I., Physicotechnical Insti-
tute, Academy of Sciences of the Ukrainian SSR, Khar'kov

"Concerning Some Particulars of the Interaction of High-Energy Electrons
and Positrons With Crystals"

Abstract:  The total yield of electron and positron bremsstrahlung is
studied as a function of crystal orientation when the primary beam is
nearly parallel to the crystal axis.  The electron and positron beams
were characterized by the following data:  the energy at the maximum
of the spectra was (1000±5) MeV;  the width of the energy spectra in
both instances was ~4 %; there was no more than 8% difference between
the average currents of the electron and positron beams; the difference
in angular divergences of the beams was no more than $5 \cdot 10^{-5}$ radian; the
number of charged background particles did not exceed 0.05% of the number
of electrons and positrons respectively.  The experiment was done on the

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USSR

GRISHAYEV, I. A. et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 9,
Sep 71, pp 1548-1550

accelerator at the Physicotechnical Institute of the Academy of Sciences
of the UkrSSR. The background due to positron converter photons was 30%
of the measured total photon yield and varied by 0.5% during the experi-
ment. Silicon crystals 0.64 mm thick cut in plane (110) and niobium
crystals 1 mm thick cut in plane (100) served as the specimens. The
strongest distinguishing parameter on the curves plotted for bremsstrahlung
yields as related to crystal orientation was the width of the minimum in
the small-angle region, which was less for positrons than for electrons
in both instances. Controlled experiments seem to indicate that this
effect can be attributed to the sign of the charge. The authors thank
V. M. Kobezskiy, V. I. Myakota, and V. I. Popenko for maintaining stable
accelerator operation; V. I. Artemov for assisting with measurement of
beam parameters; and Ye. A. Levikov for assisting with preparation of
the crystals. One figure, bibliography of five titles.

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USSR

SHRAMKO, L. M.

"Parameters of the 'BIT' Information Retrieval System and Their Dependences (Themes of Information Files, Semantic Correspondence Criteria and the Output Relevance Factor)"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 34-47 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V823).

Translation: This article studies the preliminary results of experiments on information retrieval in files of texts on computer technology, memory devices, theoretical cybernetics and a general-use lexicon using the criterion of semantic correspondence. Questions are also presented related to the method of conducting experiments and the method of determining the relevance of documents.
                                        Ye. Burgina

1/1

USSR

UDC: 62-506

SOLODOVNIKOV, V. V. and SHRAMKO, L. S.

"Design and Determination of Characteristics of Analytic, Self-Adjusting
Systems With Standard Models"

Moscow, 270 pp, 1972, "Mashinostroyeniye," pp 269-270

Translation:

## TABLE OF CONTENTS

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SOLODOVNIKOV, V. V. and SHRAMKO, L. S., "Mashinostroyeniye", 1972, pp 269-270

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· USSR

SOLODOVNIKOV, V. V. and SHRAMKO, L. S., "Mashinostroyeniye," 1972, p 2

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USSR

SOLODOVNIKOV, V. V. and SHRAMKO, L. S., "Mashinostroyeniye," 1972, p 2

4/4

USSR                                                    UDC: 62-506

SOLODOVNIKOV, V. V. and SHRAMKO, L. S.

"Design and Determination of Characteristics of Analytic, Self-Adjusting Systems
With Standard Models"

Moscow, 270 pp, 1972, "Mashinostroyeniye," p 2

Translation: This book is devoted to automatic control systems with self-
adjusting parameters, calculated by the gradient method with the use of auxil-
iary operators. Systems of this type are classified, their purposes and advan-
tages are considered, and the theory and results of research into some of the
systems' characteristics and different examples of the computation and design
are given.
     A great deal of attention has been devoted to an explanation of the
method of equivalent self-adjusting circuits, developed by the authors,
through which the computations of analytic self-adjusting systems with standard
models necessary for design can be made with sufficient ease by methods known
from control theory.
     The book is aimed at engineers and scientific-technical personnel working
with self-adjusting automatic control systems. Six tables, 91 illustrations,
bibliography of 43 titles.
1/1

USSR

UDC: 621.372

TARAN, V. A., KOFANOV, Yu. N., SHRAMKOV, I. G.

"Methods of Quantitatively Estimating the Parametric Sensitivity of Electronic Systems"

Sb. nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works of Vladimir Polytechnical Institute), 1970, vyp. 9, pp 24-30 (from RZh-Radio-tekhnika, No 5, May 71, Abstract No 5A69)

Translation: An analysis is given of methods for quantitatively evaluating the parametric sensitivity of electronic systems. Consideration is given to problems of finding the influence factor in designing electronic systems. Five illustrations, bibliography of eight titles. Resumé.

1/1

USSR

Converters

UDC: 621.317.725

SHRAMKOV, A. Ya. and NAKONECHNYY, T. T.

"Design of Quadrature Converter Circuits With Semiconductor Rectifiers"

V sb. Vopr. uluchsheniya tekhn. parametrov vypryamit. i tranzist. priborov (Problems of Improving the Technical Parameters of recti- fiers and Transistorized Devices--collection of works) Leningrad, 1970, pp 11-20 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A348)

Translation: This article indicates the importance of reducing the effect of the shape of the measurable voltage or current curve on the indications of the rectifier system instruments. A method is considered for synthesizing approximately quadrature rectifier circuits based on the use of a piecewise linear approximation of a quadratic function. This is realized through a semiconductor diode operating in a situation of large loads and having succes- sively switched-in additional resistors. Circuits of quadrature converters with stabilitrons are given, and a graph of the error of a quadrature circuit (synthesized by the method of tangents) is shown. Bibliography of six. E. L.
1/1

USSR

UDC 621.398.694:621.376

TISHCHENKO, L. M., and SHRAMKOV, A. YA.

"The General Principle of Construction of Time-Pulse Voltage Converters"

Translation: The general principle of construction of time-pulse voltage converters used in digital telemechanics devices and magnetic record-ing of information, in functional converters, and in pulse voltage stabilizers is analyzed. Structural diagrams are suggested which are particular cases of the general structure of the converter system. Brief characteristics and graphic and analytic expressions of the equations of the converters are presented. Two illustrations, 14 bibliographies.

1/1

USSR

TARAN, V. A., KOFANOV, Yu. N., SHRAMKOV, I. G.

UDC 621.396.6.019.3

"Parametric Sensitivity of Radio Equipment with Variable Parameters"

Metody razrab. radioelektron. apparatury. Materialy Seminara, Sb. 2 (Methods of Developing Radioelectronic Equipment. Materials of the Seminar. Collection 2), Moscow, 1970, pp 52-59 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 18A181)

Translation: This article contains a discussion of the method of determining functions of parametric sensitivity of linear nonstationary systems with continuous variation of the parameters during the operating process constituting the development of an influence operator method proposed earlier by the authors for stationary systems. The equations of sensitivity obtained can be solved in general form. They are solved approximately by means of a computer. There are three illustrations and a seven-entry bibliography.

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USSR                                    UDC 51.621.391

SHRANKA, R. K.

"The Reliability of Relay-Contact Circuits"

Translation: Relay-contact circuits are studied, realizing symmetrical quasi-monotonic Boolean functions of n variables with indices k and 1. The reliability of the operation of a circuit is defined by the number $s = \min_m s_m$, where $s_m$ is the probability of proper action of the circuit with its input state with norm m. Suppose $r_m$ is the probability that current will not pass through the circuit in the input state with norm m, then $s_m = 1 - r_m$ where $1 \geq m \geq k$ and $s_m = r_m$ where m > 1 or m < k. In this work for certain particular relationships between the numbers n, k, 1, m and for p > 2/3 (p is the probability of proper action of one contact) it is demonstrated that $r_{m+1} < r_m$. This inequality allows the number of input states studied to be reduced in calculating the number s'.

1/1

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USSR

BABUKHA, G. L., SHENKOVSKAYA, P. T., and SHRAYBER,
Institute of Technical Thermophysics of the Academy of Sciences
of the Ukrainian Soviet Socialist Republic

"Experimental Investigation of the Interaction of Liquid Drops"

Abstract : The experimental investigation of the stability of a
motionless big drop, the "target", by its collisions with small
drops, the "shells", of different size, flying out from a rota-
ting capillary with different speeds, is described. The experi-
ments were carried out within the range of $12 < Re < 900$,
$10^{-3} < G < 0.5$, where G is the stability criterion $G = \dfrac{\eta^2}{\sigma \varrho \langle \delta_1 \rangle}$
and $\eta$, $\varrho$, and $\sigma$ are the dynamic viscosity, density, and skin
stress coefficient and $\langle \delta_1 \rangle$ = average size of the target-drop.
From the processing of experimental data by the method of least

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USSR

BABUKHA, G. L., et al., Gidromekhanika, No 18, 1971, pp 76-79

squares, the relation of the dimensionless parameter $\beta$, charac-
terizing the summary effect of collisions,

$$\beta = 0.674 - 0.019 \, Re G^{0.4}$$

was determined. The relation shows that by $Re G^{0.4} < 35.5$, the
average effect of collisions is negative, that is, a breaking of
drops is predominant in this region. Two illustr., four formulas,
three biblio. refs.

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USSR

VISHNEVSKIY, A., Col Gen Med Ser Member of the USSR Academy of Medical Sciences, Professor; SHRAYBER, H., Maj Gen Med Serv, Professor; and LISITSYN, K., Col Med Serv, Professor

"Military-Field Surgery"

Moscow, Krasnaya Zvezda, 12 May 71, p 4

Abstract: The scientific technical revolution has brought great advances in military medicine, especially in the USSR. Blood transfusion was an early advance in the treatment of wounds and shock. Methods of quick freezing blood have been developed. Specialized substances are also made from blood. Scientists are now working on a completely artificial blood substitute to perform all of the functions of blood. New antibiotics are being created. The creation of artificial organs such as kidneys is also important. An apparatus for blood circulation is being used in operations and to assist weak hearts and lungs. Metal support pins are used to reinforce broken bones. Specialists are testing a type of adhesive for bones, and ultrasonic methods have been developed. There have been great advances in the treatment of burns. Skin transplants are among the most important methods. A special instrument called a dermatom is used here. Work is also being done on trans-
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USSR

VISHNEVSKIY, A., et al., Krasnaya Zvezda, 12 May 71, p 4

planting tissues and organs. The stitching of wounds and operations is being automated. New types of local and general anesthetics, and artificial methods of maintaining breathing and blood circulation have also appeared. Electronics, especially new x-ray and television equipment, is also changing medicine.

2/2

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USSR

UDC 621.125-529:629.123.56-181.2

VOYTETSKIY, V. V., GOL'DBERG, M. E., IGNAT'YEV, A. V., and SHRAYER, A. I.

"Programmed Control of a Supertanker Steam-Turbine Plant Fitted With a Variable-Pitch Propeller"

Leningrad, Sudostroyeniye, No 11, Nov 72, pp 26-28

Abstract: On the basis of research conducted with regard to the steam-turbine unit of a tanker of the "Krym" type, a report is given on the particular features of the programmed control of a turbogear unit with a variable-pitch propeller in application to a supertanker, and recommendations are made concerning the structure of the automated remote control of the automated power unit.   3 figures.

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Microbiology

SHRAYER, D. P., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, USSR Academy of Sciences

"Variability of the Cholera Pathogen"

Abstract: Many of the difficulties in understanding the epidemiological aspects of cholera and in controlling the infection are due to the ease with which the agent mutates. Two main processes are at work: (a) transmission of genetic material from cell to cell through conjugation and (b) transfer of genetic information from one biotype of vibrio to another by means of bacteriophages (transduction). The agent of most present-day cholera epidemics, the El Tor vibrio, is the result of transduction or lysogenic conversion of non-agglutinating cholera-like vibrios that produce hemolysin and exotoxin. It is considered that the microorganism will continue to mutate and eventually become saprophytic. This may alter the epidemic process and pathogenesis of cholera. The course of the disease will differ from that of the classical form and, instead, come to resemble that of acute gastroenteritis.

1/1

USSR

UDC: 621.315.592

RISBAYEV, T., FISHMAN, I. M., and SHRETER, Yu. G.

"Radiation Recombination at Repelling Centers in GaAs:Cu"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2003-2005

Abstract: In earlier papers written by the authors named above and published in the same journal (Ryvkin, S. M., et al, 5, 1971, p 1212; Kastal'skiy, A. A., et al, 5, 1971, p 1596) the character-istics of radiation recombinations of unbalanced current carriers in gallium antimonide repelling centers were considered, and it was shown that the Coulomb interaction of a recombining electron and a repelling impurity center completely determines the characteristics of the radiation center. In the present article, the authors in-vestigate radiation recombination at centers whose charge condition is fully known, those centers existing in GaAs mixed with Cu. The specimens in these experiments had concentrations of $n = 2 \cdot 10^{15}/cm^3$ and a mobility of $\mu = 5.5 \cdot 10^3$ $cm^2/V \cdot sec$ at room temperature, and the photoluminescence spectra were obtained at 77° K with the spe-cimens under excitation from a ruby laser with modulated Q. Curves for the experimental results are given. The authors express their
1/2

USSR                                                    UDC: 621.315.592

RISBAYEV, T., et al, Fizika i tekhnika poluprovodnikov, No 10,
1972, pp 2003-2005

gratitude to S. M. Ryvkin for his encouragement and attention to
the work.

2/2

USSR

UDC 621.771+791

FISHKIS, E. YA., DEMINA, E. L., KERSHENBAUM, V. YA., and SHREYBER, G. K.,
Moscow

"A New Process for Preparing an Aluminum-Steel Bimetal"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul/Aug 72, pp 119-122

Abstract: Friction fusing was considered as a possible preparation process
for an aluminum-steel alloy. It was shown that in the zone of contact, a
migrating layer was formed, the thickness of which was determined by the
technological parameters of the fusion process. The most stable compound of
steel with aluminum or with an aluminum alloy was obtained when the thickness
of this layer was on the order of 1-3 $\mu$. A reliable friction fusion system
for producing these alloys is explained.

1/1

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1/2      021                    UNCLASSIFIED           PROCESSING DATE--18SEP70
TITLE--ORGANOSILICON AMINES USED AS CORROSION INHIBITORS -U-

AUTHOR-(05)-SHREYBER, G.K., SAAKIYAN, L.S., LOSEV, V.B., ALKHAMEDAN, KH.,
    SKRIPCHENKO, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1) 200-2

DATE PUBLISHED-------70


SUBJECT AREAS--MATERIALS

TOPIC TAGS--CORROSION INHIBITOR, ORGANOSILICON COMPOUND, AMINE DERIVATIVE



CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/0300        STEP NO--UR/0080/70/043/001/0200/0201

CIRC ACCESSION NO--AP0053285
                    UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0053285

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION INHIBITING ACTIVITIES OF THE TITLE COMPDS., RSI(OET) SUB3 (I), WHERE R EQUALS H SUB2 N(CH SUB2) SUB3 PRIME NEGATIVE, ET SUB2 N(CH SUB2) SUB3 PRIME NEGATIVE, ET SUB2 NCH SUB2 PRIME NEGATIVE, PHNHCH SUB2 PRIME NEGATIVE, H SUB2 N(CH SUB2) SUB6 NHCH SUB2 PRIME NEGATIVE, H SUB2 N(C SUB2 H SUB4 NH) SUB2 (CH SUB2) SUB3 PRIME NEGATIVE, AND H SUB2 N(C SUB2 H SUB4 NH) SUB2 CH SUB2 PRIME NEGATIVE, WERE DETD. (THE RESULTS ARE GIVEN IN TABULAR FORM AS PERCENT PROTECTIVE ACTION) AT VARIOUS TEMPS. AND CONCNS. OF I. I CONTG. POLYAMINE GROUPS WERE MOST EFFECTIVE.

UNCLASSIFIED

USSR

UDC · 532.593:532.529

KUTATELADZE, S. S., Associate Member of the Academy of Sciences of the USSR, BURDUKOV, A. P., KUZNETSOV, V. V., NAKORYAKOV, V. Ye., POKUSAYEV, B. G., SHREYBER, I. R., Institute of Thermal Physics, Siberian Department of the Academy of Sciences of the USSR, Novosibirsk

· "Concerning the Structure of a Weak Shock Wave in a Gas-Liquid Medium"

Abstract: Experiments were done as a qualitative check on theoretical concepts of a shock wave propagating in a liquid containing gas bubbles. The piezoelectric method of measurement was used to investigate the structure of the shock wave front. The LKh609 pressure gauge was used with frequency independence from 20 to 50 kHz and sensitivity of 6.3 V/bar. Nitrogen was blown into the liquid through a porous plate at the lower end of a transparent plastic tube 6 cm in diameter and 100 cm long. Signals from pressure gauges on the inner walls of the tube were sent to a cathode-ray oscilloscope. It was found that increasing the intensity of the shock wave increases the frequency and relative amplitude of oscillations in the shock wave front. Reducing the bubble diameter increases the frequency and reduces the ampli-

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USSR

-2.

tude of oscillations in the shock wave front.  Pressure oscillograms of the shock wave front in a gas-liquid mixture with artificially increased viscosity show a monotonic pressure profile, which confirms the theoretical conclusion of a nonoscillating process in this case.

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- 20 -

USSR                                          UDC 591.147.6

SHREYBERG, G. L., and DUNAYEVA, L. P., Laboratory for the Study of Nervous and Humoral Regulation, Academy of Sciences USSR, Moscow

"Effect of Serotonin on the Function of the Hypothalamus-Hypophysis Adrenal Cortex System"

Abstract:  Serotonin (2.5-10.0 micrograms) was introduced into various nuclear formations of the hypothalamus and brain ventricle of Wistar rats through a microcannula (external diameter, 0.05-0.5 mm).  In other experiments, serotonin was introduced intra-abdominally in doses of 100-200 micrograms per 100 g body weight, together with its precursor 5-hydroxytryptophan (15-20 mg/100 g), which passes through the blood-brain barrier.  Five-hydroxytryptophan was also given 5 days after administration of aminazine (1-2 mg/kg).  Agar-agar capsules without serotonin were implanted in the brains of control animals, or 0.02 ml physiological solution (pH, 7.3-7.4) was introduced through the cannulas or intra-abdominally.  The functioning of the glandular system under study was monitored by corticosterone secretion in the blood.  It was found that serotonin-sensitive structures in the central hypothalamus participate in the activation

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USSR

SHREYBERG, G. L., et al, Doklady Akademii Nauk SSSR, Vol. 194, No 5, 1970,
pp 1237-1240

of the hypothalamus hypophysis adrenal cortex system.  Implantation of serotonin
in other regions of the hypothalamus produced a reduction in the activity of
this system.  The results of implantation of serotonin capsules in different
regions of the hypothalamus and of injection of serotonin into different parts
of the brain are discussed in detail.  It is concluded that serotonin is endo-
genically synthesized in the brain from its precursor 5-hydroxytryptophan.
Serotonin-sensitive neurons are assumed to exist at the primary capillaries of
the portal region of the hypophysis.  When they are excited, the corticotropin-
promoting factor is formed and separates out.

2/2

TITLE--FUNCTIONAL ORGANIC PEROXIDES. V. HALOACYL PEROXIDES -U-

AUTHOR-(04)-SHREYBERT, A.I., KHARDIN, A.P., KIBALNIKOVA, R.I.,
    YERMARCHENKO, V.I.
COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 466-8

DATE PUBLISHED--------70


SUBJECT AREAS--CHEMISTRY, ORDNANCE

TOPIC TAGS--ORGANIC PEROXIDE, EXPLOSIVE, BENZENE DERIVATIVE, SODIUM
    COMPOUND



CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1576          STEP NO--UR/0366/70/006/003/0466/0468

CIRC ACCESSION NO--AP0112570
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0112570
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  THE REACTION OF 2RCOCL WITH NA
  SUB2 O SUB2 GAVE 55-60PERCENT (RCO) SUB2 O SUB2 (R IS ME-CCL SUB2, CLCH
  SUB2 CCL SUB2, BRCH SUB2 CH SUB2, OR ME SUB2 CCL).  SIMILARLY, 2 RC-OCL
  REACTED WITH BZOONA TO GIVE RCO SUB2 OBZ (R AS ABOVE).   THESE COMPDS.
  EXPLODE DURING SOTRAGE AT 20-5DEGREES.

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UNCLASSIFIED

1/2     024                     UNCLASSIFIED            PROCESSING DATE--04DEC70
TITLE--ONSET OF THE HYDROGEN ABSORPTION OF STEEL DURING CORROSION IN
   HYDROGEN SULFIDE ELECTROLYTES -U-
AUTHOR-(02)-SHPARBER, I.S., SHREYDER, A.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 905-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--HYDROGEN, ABSORPTION, STEEL, AQUEOUS SOLUTION, SODIUM
   CHLORIDE, SULFATE, HYDROGEN SULFIDE, CORROSION RATE, THERMAL EFFECT,
   ELECTRODE POTENTIAL/(U)ST3 STEEL, (U)0KH13 STEEL, (U)KH18N10T STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0973          STEP NO--UR/0080/70/043/004/0905/0907

CIRC ACCESSION NO--AP0131558
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0131558
ABSTRACT/EXTRACT--(U) GP-0-  ABSTRACT.  STEEL CAN BE DESTROYED AS A RESULT
OF H ABSORPTION AT THE SAME TIME THAT THE STEEL IS BEING CORRODED.
THIS POSSIBILITY WAS EXAMD. FOR STEELS IMMERSED IN AQ. SOLNS. OF NA
PRIME POSITIVE, CL PRIME NEGATIVE, AND SO SUB4 PRIME2NEGATIVE
(APPROXIMATING DRAINAGE WATER) AT A PH 5, WITH OR WITHOUT H SUB2 S, AND
WITH BUBBLING OR WITHOUT BUBBLING OF AIR OR N THROUGH THE SOLNS.  STEADY
STATE POTENTIALS OF STEEL ELECTRODES WERE MEASURED AT 30-90DEGREES AND
THE VALUES WERE COMPARED WITH CALCD. VALUES FOR THE H SUB2 -H PRIME
POSITIVE AND FE-FE PRIME2POSITIVE ELECTRODES; WHEN THE MEASURED
POTENTIAL IS LESS NEG. THAN THE VALUE FOR FE BUT MORE NEG. THAN THE H
VALUE, THE 2 PROCESSES MIGHT OCCUR SIMULTANEOUSLY.  STEEL ST. 3 CAN
ABSORB H WHILE IT IS CORRODED UNDER ALL THE CONDITIONS USED.  WITH OKH13
STEEL, H FORMATION IS NOT POSSIBLE DURING CORROSION IN H SUB2 S FREE
SOLNS. AT 70DEGREES AND 90DEGREES AND IS BARELY POSSIBLE AT 30DEGREES
AND 50DEGREES, WHILE IN SOLNS. SATD. WITH H SUB2 S, SIMULTANEOUS
CORROSION AND H FORMATION CAN OCCUR READILY.  ON THE BASIS OF
POTENTIALS MEASURED WITH KH18N10T STEEL, LOCATING THE PROBE AT SOME
DISTANCE FROM THE SAMPLES, H SHOULD NOT BE FORMED DURING, CORROSION BUT
IT ACTUALLY IS; THERE ARE DISCRETE ACTIVE AND PASSIVE SITES, THE LATTER
BECOMING MORE DOMINANT AS THE TEMP. INCREASES.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--RESONANCE BROADENING OF THE L SUBALPHA LINE OF HYDROGEN -U-

AUTHOR-(02)-SKIDAN, V.V., SHREYDER, YE.YA.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970. 28(4), 627-9

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ABSORPTION SPECTRUM, ABSORPTION COEFFICIENT, LIGHT ABSORPTION, HYDROGEN, HIGH FREQUENCY DISCHARGE, LINE WIDTH, GAS PRESSURE, RESONANCE ABSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1481

STEP NO--UR/0051/70/028/004/0627/0629

CIRC ACCESSION NO--AP0118470

UNCLASSIFIED

CIRC ACCESSION NO--AP0118470      UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   OPTICAL ABSORPTION INVESTIGATION      PROCESSING DATE--30OCT70
WAS CARRIED OUT ON THE WIDTH OF THE DISPERSION COUNTOUR OF THE H L
SUBALPHA RESONANCE LINE.   THE ABSORPTION COEFF. WAS MEASURED BY USING
AT. H AND THE LIGHT FROM A HIGH FREQUENCY DISCHARGE IN A MIXT. OF HE AND
D. H WAS COMPLETELY DISSOCD.   ABSORPTION INCREASED WITH INCREASING
CURRENT AND REACHED SATN.   THE WIDTH OF THE LINE DEPENDS LINEARLY ON
PRESSURE.

UNCLASSIFIED

USSR

UDC:  51:155.001.57:001

SHREYDER, Yu. A.

"Procedural Criteria for the Justifiability of Estimator Parameters"

Nauch.-tekhn. inform. Sb. Vses. in-t nauch. i tekhn. inform. (Scientific
and Technical Information. Collection of the All-Union Scientific and Tech-
nical Information Institute), 1971, ser. 2, No 1, pp 5-7, 35 (from RZh-
-Kibernetika, No 11, Nov 71, Abstract No 11V865)

Translation:  The author discusses certain procedural criteria for the justi-
fiability of estimator parameters in scientology and information theory.
These criteria are based simultaneously on strictness and semantic content.
The following principles are formulated:  1) limitations on the selection
of estimator parameters and their change with transition from one system
to another is defined by theory; 2) the theory should provide for formu-
lation of basic meaningful quantities and the basic relations between these
quantities; 3) each estimator parameter parameter must correspond to a
definite meaningful quantity in the theory (must take its meaning from the
theory); 4) any choice of estimator parameters must be such as to maintain
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USSR

SHREYDER, Yu. A., Nauch.-tekhn. inform. Sb. Vses. in-t nauch. i tekhn. inform., 1971, ser. 2, No 1, pp 5-7, 35

the relations between the meaningful quantities which are relevant for the given theory.  Illustrative examples are presented.  V. Mikheyev.

2/2

USSR

SHREYDER, Yu. A., All-Union Institute of Scientific and Technical Infor-
mation, Academy of Sciences of the USSR

UDC: 51:801

"Language and Sense. (The Language of Science and What is Hidden Behind it)"

Yazyk i smysl. (Yazyk nauki i chto za nim skryvayetsya) (cf. English above),
Moscow, 1971, 37 pp (No 3959-72 Dep.) (from RZh-Kibernetika, No 5, May 72,
Abstract No 5V606 DEP)

Translation: The article deals with the problem of levels of semantics and
the place of linguistic problems in science. The concept of sense is re-
lated to the problem of interpretation on models of formal theories. The
relation between semantics and esthetic categories is discussed as well as
the relation between semantics and pragmatic criteria of truth. Analogies
are drawn between the language of science and the language of art. Author's
resumé.

1/1

USSR

SHREYDER, Yu. A.                                        UDC:   51:801

"Information in Structures With Relations"

V sb. Issled. po mat. lingvist., mat. logike i inform. yazykam (Research on
Mathematical Linguistics, Mathematical Logic and Information Languages--
collection of works), Moscow, "Nauka", 1972, pp 147-159 (from RZh-Kibernetika,
No 6, Jun 72, Abstract No 6V634)

Translation:  A survey on research and development of thesauri.  See also
RZh-Mat, 1965, 12V413 and 1968, 11V604.


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CSO:   1843-W
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                                - END -

USSR

UDC 801:51

SHREYDER, Yu. A.

"Thesauri in Informatics and Theoretical Semantics"

Nauch.-tekhn. Inform. sb. Vses. in-t Nauch. i Tekhn. Inform. [Scientific and Technical Information, Collection of All-Union Institute of Scientific and Technical Information], Series 2, No 3, 1971, pp 21-24, 40, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V862 by A. Doroshenko).

Translation: A review is presented of works on the problems of thesauri (T). A general definition of T as a set of sense-expressing elements (words, word combinations, etc.) in a language with fixed semantic relationships is suggested. Abstract T (AT) and specific T (ST) are differentiated. An AT is a certain system of knowledge (T of a given language, T of an individual, etc.), which changes with the development of new information. The volume of information may be completed between sufficiently similar (matched) T. ST as a realization of AT may be fixed by a graph, matrix or list. It is noted that the formal theory of relationships of similarity (tolerance) provides a convenient apparatus for description of semantic models. Tolerance relationships do not have the property of transitiveness; therefore, they can describe "eroded" structures of semantic fields. Problems of study and prospects for development of T are discussed. 15 Biblio. Refs.

1/1

USSR

SHREYDER, Yu. A.

"Topological Language Models"

Probl. Strukturn. Lingvistiki 1971 [Problems of Structural Linguistics 1971 -- Collection of Works], Moscow, Nauka Press, 1972, pp 47-67 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V900 by A. Muchnik).

Translation: At the beginning of this article, a simple neighborhood model of a language is presented. Certain facts from set-theory topology ($T_0$ spaces) as well as the mutual relationship of tolerance ("similarity") are illustrated and utilized in this model.

The author writes that the most important problem of mathematical linguistics consists in the construction, investigation and testing of models capable of reflecting the organization of natural languages, and that a certain (sometimes several) methods of fixation or description of various sets of texts -- "languages" -- are usually related to each such model. Noting that up to now, only methods of mathematical logic and algebra have been applied to the solution of this problem, the author mentions set theory models and configuration models of language (the works

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USSR

SHREYDER, Yu. A., Probl. Strukturn. Lingvistiki 1971, Moscow, Nauka Press, 1972, pp 47-67.

of Kulagina, Gladkiy, etc.) and describes certain topological models of language.

A method is suggested for description of the syntactical structure of a language using hierarchical constructions in graphs. "In order to produce texts of a language, these texts are placed into texts of a higher rank. Structural connections are described as certain precise connections between various stages ("point-center" type) and conditions of compatability at each level."

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USSR

AREF'YEV, I. M., ZAYTSEV, G. I., KRIVOKHIZHA, S. V., OZHOGIN, YA. P.,
SHREYNER, B. YA.                                                           UDC 534-8

"Dispersion of the Velocity of Sound in Aniline-Nitrobenzene Solutions"

Kratk. soobshecheniya po fix. (Brief Communications on Physics), 1970, No 7,
PP 37-41 (from RZh-Fizika, No 12(II), Dec 70, Abstract No 12Zh805)

Translation: The dispersion of sound in an aniline-nitrobenzene solution was
investigated to observe its negative value, which is possible for associated
solutions. At a temperature of 20°C the velocity of hypersound at a frequency of
·5.5·10⁹ Hz was determined in terms of the displacement of the Mandelstam-Bril-
louin components in the spectra of the thermal scattering of light which was
excited by an He-Ne laser at an angle of 90°. The velocity of ultrasound was
measured at a frequency of 2.8·10⁶ Hz. It turned out that negative dispersion
is absent in the solution. V. Ye. Gordeyev.

1/1

USSR

SHRON, R. Z., NIKANOROVA, N. I., KRECHET, L. E., Urals Heat-Engineering Institute, ZEMZIN, V. N. and ZHITNIKOV, N. P., Central Boiler and Turbine Institute

"Influence of Dispersion Hardening on the Tendency of Welded Joints in Chrome-Molybdenum-Vanadium Steels Toward Brittle Rupture at High Temperatures"

Abstract: This work studies the influence of dispersion hardening on the ductility and tendency toward brittle rupture at high temperatures of welded joints in steels types 12Kh1MF and 15Kh1M1F. This study showed the influence of dispersion hardening in heated areas on the tendency of these alloys to local brittle ruptures during heat treatment and use in the untempered and low-tempered states. Heat treatment with high tempering increases ductility and the brittle-rupture resistance of these alloys. To prevent brittle rupture, the holding temperature of steam pipes during heat treatment should be at least 720° C.

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1/2    027
TITLE--MODIFICATION OF POLYETHYLENE FILMS BY PHOTOCHEMICAL GRAFT
    POLYMERIZATION -U-

UNCLASSIFIED    PROCESSING DATE--30OCT70

AUTHOR-(03)-KOSTYLEVA, Z.A., SHRUBOVICH, V.A., KACHAN, A.A.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, 2, 14-15

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--GRAFT POLYMERIZATION, ACTIVATION ENERGY, THERMAL STABILITY,
    COPOLYMER, PLASTIC FILM, CHEMICAL REACTION, ACRYLIC ACID, POLYETHYLENE,
    PHOTO SENSITIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1689

STEP NO--UR/0191/70/000/002/0014/0015

CIRC ACCESSION NO--AP0112683

UNCLASSIFIED

272    027

CIRC ACCESSION NO--AP0112683    UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE PHOTOSENSITIZED (WITH PH SUB2
CO) GAS PHASE GRAFT COPOLYMN. OF ACRYLIC ACID (I) ON POLYETHYLENE (II)    PROCESSING DATE--30OCT70
FILMS WAS STUDIED.   THE COPOLYMN. WAS A 1ST ORDER REACTION WITH RESPECT
TO LIGHT INTENSITY (I) WHENEVER I IS SMALLER THAN 10 NEGATIVE PRIME8
EINSTEIN,CM PRIME2,SEC, WHEREAS AT HIGHER I THE ORDER WAS INDEPENDENT OF
I.   THE ACTIVATION ENERGY (DETD. AT 30-50DEGREES) WAS 4.6 KCAL,MOLE.
THE ADVANTAGES OF THE PHOTOSENSITIZED GRAFT COPOLYMN. OF I ON II FILMS
WERE POINTED OUT.   THE MODIFIED II FILMS EXHIBITED HIGHER THERMAL
STABILITY AND IMPROVED PHYSICOMECH. PROPERTIES.

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TITLE--TWO QUANTUM BENZOYL CHLORIDE PHOTOSENSITIZED CROSSLINKING OF POLYTHYLENE -U-

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